

We claim:

1. A method for preparing a nitric oxide-releasing metallic surface comprising:

- a) stably binding a nucleophile residue to a metallic surface; and
- b) reacting said surface having a nucleophile residue with nitric oxide gas.

2. The method for preparing a nitric oxide-releasing metallic surface of claim 1 wherein said metallic surface is stainless steel.

3. The method for preparing a nitric oxide-releasing metallic surface of claim 1 wherein said nucleophile residue is an aminofunctional silane selected from the group consisting of 4,7,10-triazadecyl-trimethoxysilane, 3-aminopropyltriethoxysilane, 3-aminopropyltrimethoxysilane, 3-aminopropyldiisopropylethoxysilane, and 3-aminopropylmethyldiethoxysilane

4. The method for preparing a nitric oxide-releasing metallic surface of claim 1 wherein said surface having a nucleophile residue is reacted with said nitric oxide gas under an anaerobic pressurized environment.

5. A method for preparing a nitric oxide-releasing metallic surface comprising:

- a) silanizing a metallic surface;
- b) bonding a nucleophile containing compound to said silanized metallic surface; and
- c) reacting said nucleophile containing compound bonded to said silanized metallic surface with nitric oxide gas.

6. The method for preparing a nitric oxide-releasing metallic surface of claim 5 wherein said silanizing step further comprises reacting said metallic surfaces with a silanizing compound selected from the group consisting of a vinylsilane and an isocyanatosilane.

7. The method for preparing a nitric oxide-releasing metallic surface of claim 6 wherein said vinylsilane is trichlorovinyl silane.

8. The method for preparing a nitric oxide-releasing metallic surfaces of claim 6 wherein said isocyanatosilane is 3-isocyanatopropyl-triethoxysilane.

9. The method for preparing a nitric oxide-releasing metallic surface of claim 5 wherein said nucleophile containing compound is selected from the group consisting of C<sub>1</sub>-C<sub>10</sub> cycloalkyl, alkyl and alkenyl monoamines, methylamine, ethylamine, diethylamine, ethylmethylamine, triethylamine, n-propylamine, allylamine, isopropylamine, n-butylamine, n-butylmethylamine, n-amylamine, n-hexylamine, 2-ethylhexylamine, cyclohexylamine, ethylenediamine, polyethyleneamine, 1,4-butanediamine, 1,6-hexanediamine, n-methylcyclohexylamine, alkeneamines, ethyleneimine and polyethylenimine.

10. The method for preparing a nitric oxide-releasing metallic surface of claim 5 further comprising:

cross-linking said nucleophile residue containing compound prior to reacting said nucleophile with said nitric oxide gas;

reacting said cross-linked nucleophile containing compound with at least one nucleophile compound to enrich said metallic surface with additional nucleophile residues; and

reacting said metallic surface with additional nucleophile residues with nitric oxide gas.

11. The method for preparing a nitric oxide-releasing metallic surface of claim 5 wherein said surface having a nucleophile residue containing silane is reacted with said nitric oxide gas under an anaerobic pressurized environment.

12. A method for preparing a nitric oxide-releasing metallic surface comprising:

c) applying said mixture to said metallic surface.

13. Medical devices for delivering nitric oxide in therapeutic concentrations for sustained periods of time comprising: metallic surfaces having nitric oxide releasably bound thereto through diazeniumdiolated nucleophiles coupled to silane intermediates, said silane intermediates being bound to said metallic surface.

14. The medical devices for delivering nitric oxide in therapeutic concentrations for sustained periods of time of claim 13 wherein said medical device is selected from the group consisting of arterial stents, guide wires, catheters, trocar needles, bone anchors, bone screws, protective platings, hip and joint implants, electrical leads, biosensors and probes.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
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